

13 June 1997

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MEMORANDUM

From:

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To:

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Subj: NSA MEMPHIS BRAC CLEANUP TEAM (BCT) MEETING

Encl: (1) Minutes from 27-29 May 97 BCT Meeting

1. Enclosure (1) is forwarded for your review.
2. As a reminder, the next BCT meeting is scheduled for 23-25 June.
3. Please call if you have comments and/or questions at (803) 820-5610, DSN 583, e-mail: dporter@efdsouth.navfac.navy.mil



NSA MEMPHIS BCT MEETING

DATES: 27-29 May 1997

LOCATION: NSA Memphis, Millington

SCRIBE/RECORDER: Lawson Anderson

TIMEKEEPER: Jack Carmichael

Present	Name	Organization	fax	phone	e-mail
X	Lawson Anderson	EnSafe	(901) 937-4275	(901) 372-2454	landerson@ensafe.com
X	Tonya Barker	NSA Memphis	(901) 874-5461	(901) 874-7022	
X	Jack Carmichael	USGS (Nashville)	(615) 736-5424	(615) 736 2066	jkcarmic@usgs.gov
X	Brian Donaldson	EPA Region IV	(404) 562-8554	(404) 562-8518	donaldson.brian@epamail.epa.gov
	Sue Hosmer	NSA Memphis	(901) 874-5761	(901) 874-5649	
X	Keith Johns	EnSafe (Raleigh)	(919) 851-1886	(919) 851-4043	kjohns@ensafe.com
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X	Jim Morrison	TDEC (Memphis)	(901) 368-7958	(901) 368-7979	
X	David Porter	SOUTHDIV	(803) 820-5563	(803) 820-5610	dporter@efdsouth.navfac.navy.mil
X	Robert Smith	EnSafe (Memphis)	(901) 372-7962	(901) 372-2454	rpsmith@ensafe.com
X	Mark Taylor	SOUTHDIV	(803) 820-5573	(803) 820-5563	mrtaylor@efdsouth.navfac.navy.mil
X	Rob Williamson	NSA Memphis	(901) 874-5461	(901) 874-7022	

Others Present:

Name	Organization	fax	phone	e-mail
Bill Parks	USGS			
Frank Chappelle	USGS			
Kay Weichkamper	EPA Region IV			
Larry Hughes	EnSafe			
Charles Jobe	TDEC-Nashville			
Karen Prochnow	EPA Region IV			
Thuane Fielding	SOUTHDIV			
John Stedman	E/A&H			
Ronnie Britto	E/A&H			
Randy Wilson	NSA Memphis			
Clayton Bullington	TDEC-Nashville			
Jay Corneliuses	EnSafe			
Fred Swan	EnSafe			
Brian Mulhearn	EnSafe			
Jordan English	TDEC-Memphis			

NSA MEMPHIS BCT MEETING

27-29 MAY 1997

Tuesday, 27 May 1997

1:00 pm - 6:00 pm Environmental Conference Room, Bldg S-241

30 min

- Review agenda/review minutes from April BCT meeting
Objectives: Ensure minutes are accurate and reflective of last meeting. Ensure agenda addresses current concerns and issues

There were no comments on the April BCT meeting minutes. A discussion of May agenda changes and additions took place, as follows:

Randy Wilson will discuss status of tanks today, rather than Thursday.

EPA has not finished reviewing SWMUs 5 and 10 reports. Will be ready to discuss SWMU 10 by tomorrow. Probably will not finish SWMU 5 before meeting is over.

Discussion of GIS/Arcview capabilities will take place today, rather than Wednesday because Steve Waldron (E/A&H GIS operator) is present to demonstrate Arcview and answer questions.

Jetway sampling - TDEC will contact dry cleaners in July or August. E/A&H will generate a tech memo report.

N-121 Spill Cleanup - add to agenda

Jim Morrison pointed out that he will be on vacation from June 7 through July 14. Jordan English will sit in for him at June BCT meeting.

60 min

- Report on follow-up assignments from April BCT meetings:

EnSafe (Lawson Anderson/Robert Smith/Keith Johns/Larry Hughes/John Stedman):

- Provide the following documents for BCT review:
 - SWMU 5 Done
 - SWMU 8 On hold
 - SWMU 10 Done
 - Technical Memorandum/PRE - PCBs in Ditch near SWMU 57 Will do by 6/13; TDEC's copy to Charles Jobe
 - Technical Memorandum - SWMU 2 Passive Soil Gas Results Will submit in early June
 - Assembly A Long-Term Groundwater Monitoring Report Scheduled to submit by end of week
- Provide the following documents for preliminary review by Navy/USGS:
 - EBST/FOST On board review of Non-Airfield Parcel scheduled for Thursday
 - SWMU 7/Northside Groundwater RFI Report Will submit in late July

VCA Report - Gasoline Pits and SWMUs 3, 7, & 18 Will submit mid- to late July

SWMU 66 VCA Report Will submit in early June

Assembly F CSI Report Will submit in early June

Follow-up Gray Area Report (Northside) Will submit mid- to late June

MAG-41 Drum Storage Area Gray Area Work Plan Will submit in early June

SWMU 59 VCA Work Plan In production for submittal next week

Assembly E RFI Report Will submit next week

- Develop fact sheet on CMS for July RAB To David Porter by Thursday or Friday
- Check with Fisher & Arnold (Millington city engineers) about approval for discharging decon/rinse water from N-121 spill cleanup to sanitary sewer Done and gone
- provide a chain and lock on valve of the tank at N-121 containing spill cleanup water Done
- Collect additional samples at N-121 chromic acid spill site (3-part composite sample from Area 1 at 12 inches BLS to estimate depth of excavation (if required) - test for total chromium.) Done
- Conduct addition soil removal at N-121 chromic acid spill, depending of sample results Pending
- Spread contents of Assembly E IDW drums (with exception of 6 which indicated high TPH during PID screening) adjacent to DRMO salvage yard. Done
- Re-verify tank at N-6 using TEM Done
- Core through fire mats at SWMU 5 and collect samples to determine if soil under mats is contaminated, develop VCA work plan if needed Done
- revise map with samples results/groundwater flow for background well No. 5/Jetway (use BG5, JET60, and SWMU 5 for flow direction, also rename JET 60 as an additional background well) Done
- re Army Reserves plans for use of area near SWMU 65, pull together RFI maps and information in time to review before next meeting. Done
- develop technical memo on PAH risk (similar to dieldrin memo) Will do
- develop exercise for next RAB meeting to have members rank the nine CMS criteria (each criterion having been explained up front) Draft to David Porter by tomorrow
- collect additional samples at SWMU 8 to define vertical and horizontal extent of dieldrin, including a sample north of area (if we do not already have this) Done
- submit package (as defined during BCT brainstorming session) to Frank Chappell by 16 May in preparation for 28 May meeting (copy to Brian Donaldson, Jim Morrison, and Mark Taylor) Done
- Larry Hughes: prepare 15 minute overview of contaminant conceptual model for 28 May meeting with Frank Chappell Done
- John Stedman: prepare 20 minute overview of CMS approach for 28 May meeting with Frank Chappell Done
- arrange for Brian Mulhearn to attend May BCT meeting with EPA/TDEC eco-risk assessors (Thursday, 29 May) Done
- provide sampling support to DynCorps on 23 May at N-26 soil removal Done
- revisit CSI SWMUs where eco-risks may be a factor Scheduled for Thursday

EPA Region IV (Brian Donaldson):

- Arrange for Kay Weichkamper to attend May BCT meeting with Frank Chappell (Wed, 28 May) and EPA eco-risk assessor to attend May BCT meeting (Thursday, 29 May) Done
- Provide review comments on the following:
 - SWMUs 15 & 21 RFI Report Done; has risk comments
 - FOSL for Brig Comments given to David Porter a couple of weeks ago
 - SWMU 10 CSI Report Will have by tomorrow
 - MW Abandonment and Long-term Monitoring Technical Memo Done
 - SWMU 5 RFI Report Needs to review changes
- check with EPA compliance personnel to determine if more soil should be excavated at N-121 spill site Done
- provide approval/comments on SWMU 60 RFI report Has reviewed except for risk assessment; risk assessment to be reviewed by subcontractor

NSA Memphis - Environmental (Tonya Barker/Rob Williamson/Randy Wilson):

- Arrange for additional soil disposal at SWMU 8 via COE, depending on additional dieldrin confirmation samples. Pending
- Dispose of N-121 spill cleanup soil in rolloffs (check with TDEC Solid Waste Division before shipping soil as non-hazardous waste) In progress
- acquire another rolloff should additional excavation be required at N-121 Pending
- request plans/specs from the Army Reserves on their planned use of area near SWMU 65/notify Army Reserves that it is okay to park vehicles now, if soil not disturbed Plans/specs were sent to Planning Office; Roger Aitken received

them but has been out of town. Rob picked them up during a break and the team reviewed them along with a data package for SWMU 65.

- SWMU 2 Levee Project (not on original agenda) Chris Mills of the USACE arrived at meeting to discuss the levee project affecting the east side of SWMU 2. Should not affect existing MWs. Construction will be all fill with exception of 5' wide, 1.5' deep ditch along west side of levee. Corps wants to know if soil cut from ditch can be included in levee fill - need to check surface soil data. Also, Corps has a burn area for trees, roots, etc. proposed in NE corner of SWMU 2 near GM-1 - they will move it north. Corps requested info. on what might be encountered along east side of landfill. Corps has identified wetland north of GM-1 (outside SWMU) - they will avoid the wetland. At TDEC request, Rob will coordinate with Corps on minimizing stormwater runoff from north.
- Notify Rodger Aitken that BCT suggests an alternative location for new fire station, rather than sitting at SWMU 14 Done; they are considering changing the location to north of Savitz Drive where duplex housing used to be, but would prefer to keep it at SWMU 14 because the fire trucks could pull directly out onto 7th Avenue. E/A&H will superimpose the proposed fire station on a GIS plot of the site and fax it to team members for review.
- Coordinate soil removal by DynCorps at SWMU 61 (N-26) - notify EnSafe prior to work. Soil removed and drummed (55 drums). Were waiting on results for soil disposal sample before proceeding with demolition. Team agreed that demolition could proceed.
- In coordination with John Kariyk/SOUTHDIV, proceed with CAP for UST at N-12. On agenda; EAR/CAP added to Execution Plan for this year.
- review draft EBST/FOST Done

NSA Memphis - Public Affairs (Sue Hosmer):

- Place reminder calls to RAB members prior to RAB meetings to increase attendance. Next RAB

SOUTHDIV (David Porter):

- Distribute revised page 1 of the Business Plan Done
- Develop a point paper on transferring contaminated property. Emailed last Thursday (handed out hard copies)
- Request letter from Airport Authority stating their intent to pursue transfer of the airfield parcel through a Public Benefit Conveyance Requested
- review draft EBST/FOST Done for Airfield Parcel; on board review of Non-Airfield Parcel scheduled for 11:00 a.m., Thursday

SOUTHDIV (Mark Taylor):

- Review the following documents:
 - Groundwater Well Management Plan Not reviewed (Priority D)
 - SWMU 7/Northside Groundwater RFI Report Has not received
 - VCA Report - Gasoline Pits and SWMUs 3, 7, & 18 Has not received
 - SWMU 66 VCA Report Has not received
 - Assembly F CSI Report Has not received
 - Follow-up Gray Area Report (Northside) Has not received
 - MAG-41 Drum Storage Area Gray Area Work Plan Has not received
 - SWMU 59 VCA Work Plan Has not received
 - Assembly E RFI Report Has not received
 - Assembly F CSI Report Has not received
 - Administrative Record The team discussed their preferences for the media type (i.e., CD, hard copy, microfiche) and tasked E/A&H with researching required viewing software, hardware, search capabilities, etc. Need to determine which repositories will have a copy and what media type and hardware they will need.
- Arrange for CSY Detachment to remove petroleum contaminated soil at SWMU 60 (work should coincide with North Fuel Farm removal/cleaning) Will do

TDEC (Jim Morrison):

- Coordinate radiation survey by TDEC personnel with Rob Williamson (field work scheduled for mid-May) TDEC RAD personnel misunderstood scope and thought survey covered entire base (i.e., all the possible sites on the list prepared by Rob Williamson), thus they felt it was beyond the scope of services they could provide. Rob and Jim Morrison will prioritize the most important sites.

- Arrange for TDEC eco-risk assessor to attend May BCT meeting (Thursday, 29 May) **Done**
- Coordinate with TDEC Dry Cleaner program to notify Jetway of our sampling results. **Will be handled through the TDEC PA/SI Program**
- Provide letters of concurrence for SWMUs 1, 3, 4, 6, 10, 11, 26, 27, 31, 36, 38, 40, 42, 44, 50, 51, 52, 53, 62, and 64 (based on EPA Region IV letter of 17 Mar 97) **Done, not sent yet**
- Provide review comments on the following:
SWMUs 15 & 21 RFI Report **Will have tomorrow**
SWMU 10 CSI Report **Has not reviewed**
SWMU 5 RFI Report **Has not reviewed**
- Provide approval on the following:
North Fuel Farm Tech Memo **Will do**
SWMU 16 CSI Work Plan **Will do**
SWMU 60 VCA Work Plan **Will do**
- ensure a substitute is available to attend the June BCT **Jordan English will attend**
- check UST regulations regarding the disposal of excavated soil, and any sampling requirements to determine if the samples must be biased toward hot spots. **Will do**
- asked for guidance from TDEC on when PREs, TRVs, and/or full human and ecological risk assessments are required for either CSI or RFI SWMUs, and determine if any SWMUs need to be revisited from an eco standpoint **Will defer to risk assessors**
- research potential State restrictions, including the possibility of natural resource damages, and send David Porter a brief summary for inclusion in the point paper for transfer of contaminated property **Done**
- provide approval/comments on SWMU 60 RFI report **Will do before vacation**

USGS (Jack Carmichael):

- Review the following documents:
Groundwater Well Management Plan **David Ladd sent Larry Hughes questions and comments**
SWMU 7/Northside Groundwater RFI Report **Has not received**
VCA Report - Gasoline Pits and SWMUs 3, 7, & 18 **Has not received**
SWMU 66 VCA Report **Has not received**
Assembly F CSI Report **Has not received**
Follow-up Gray Area Report (Northside) **Has not received**
MAG-41 Drum Storage Area Gray Area Work Plan **Has not received**
SWMU 59 VCA Work Plan **Has not received**
Assembly E RFI Report **Has not received**
Assembly F CSI Report **Has not received**
- prepare bulletized list of key aspects of hydrogeology to include in package EnSafe sending to Frank Chappell on 16 May (in preparation for 28 May meeting) **Done in text format**
- provide 15 minute overview of hydrogeology at 28 May meeting with Frank Chappell **Will do if necessary; will bring posters**
- Big Creek Drainage Canal (not on original agenda) **USGS has surveyed the stream bed. Water is 12 feet deep in some places and preliminary indications are that the channel may be cut deep enough in some places to be in contact with the deeper sand and gravel unit of the alluvium.**

30 min

- Discuss SWMU 8 post-excavation dieldrin sample results and risk summary.
Objective: Come to consensus on whether or not additional removal is required

Team reviewed May 14, 1997 memo describing sample results and human health risk. Decision made to table discussion until after a site visit with ecological risk assessors. After visiting the site on Thursday, the eco risk assessors, requested that two additional samples be collected - one soil sample from the area between the former soil stockpile and the wetland topographically downgradient of the site (stormwater runoff area) and one sediment sample where stormwater runoff from the soil stockpile enters the wetland. The analytical results (maximum concentrations) for these and previously collected samples will be used to calculate the potential dietary exposure and hazard quotient for the former soil stockpile area, the runoff area, and the wetland.

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- Review TEM data on tank at N-6

Objective: Come to consensus on tank removal/develop POA

Larry Hughes explained the results of geophysical surveys at N-5, N-6, and SWMU 23 (Fire House). The results indicate the likely presence of a UST at N-6, the possible presence of a UST at N-5, and no evidence of a UST at SWMU 23. E/A&H will core a hole directly over the suspected USTs and use a probe to determine if the tanks are still in the ground. If present, a VCA work plan will be prepared for removal of the tank(s).

15 min

- Review SWMU 5 soil sampling results from beneath pads

Objective: Come to consensus on whether or not to remove pads

Tabled pending receipt of sample results from tank removal.

30 min

- Discuss review comments on RFI report for SWMU 5

Objective: Review TDEC/EPA comments, discuss, and come to consensus on report

Tabled - all comments not available and time did not allow.

30 min

- Discuss review comments on RFI reports for SWMUs 15 and 21

Objective: Review TDEC/EPA comments, discuss, and come to consensus on reports

EPA provided both hard copy and electronic versions of their comments; TDEC provided verbal comments for SWMU 21 that applied to both sites.

30 min

- Discuss review comments on CSI report for SWMU 10

Objective: Review TDEC/EPA comments, discuss, and come to consensus on report

Tabled - all comments not available and time did not allow.

30 min

- Site visit to N-1 to view battery acid spill

Objective: Come to consensus on whether or not site requires additional investigation

The BCT visited the site and determined that the battery acid leakage was a decontamination issue, as there was no indication that a release to the environment (i.e., outside the building) had occurred.

- N-121 Spill Cleanup (not on original agenda)

Brian Donaldson's opinion is that no further excavation is needed. Removing to background will likely reduce penalties/fines. He will check on this with EPA compliance personnel. Jim Morrison will check with TDEC Solid Waste Division personnel for a TDEC ruling.

Wednesday, 28 May 1997

8:00 am - 5:00 pm EnSafe (5724 Summer Trees Drive)

30 min

■ Review CAMP

Objective: Review TDEC/EPA comments, discuss, and come to consensus on plan

Time did not allow - will be provided through telecon.

90 min

■ Presentation by/discussion with Ronnie Britto and John Stedman on a preliminary evaluation of natural attenuation

Objective: Brief BCT on preliminary evaluation

John Stedman and Ronnie Britto briefly discussed the information contained in the May 16, 1997 technical memorandum *NSA Memphis Northside Groundwater Data Summary* (provided to attendees in advance of the meeting), including a proposed approach for conducting the CMS and evaluating natural attenuation. Kay Wischkaemper (USEPA) commented during the followup conversation that we would need to monitor the centerline of plumes, monitor both plumes that are likely to have natural attenuation occurring and those that are not, and evaluate pump and treat as an alternative.

30 min

■ Review material to be present to Frank Chapelle

Objective: Reach consensus on material to be present to Frank Chapelle

4 hrs

■ Meeting with Frank Chappelle on Natural Attenuation (see attached agenda)

David Porter gave a brief overview of the project, the problem, property transfer issues, and the objectives of the meeting. Jack Carmichael then gave an overview of the site hydrogeology and some of the things we have done to document that the Memphis aquifer is protected. Larry Hughes explained the conceptual model of groundwater contamination. During this discussion, Frank Chapelle made the point that different uses of solvents generate different daughter products. For example, when aliphatic hydrocarbons are mixed with solvents, dechlorination increases. John S. and Ronnie B. then gave a more detailed presentation of the information in the technical memo described above. During this discussion Kay W. mentioned that when picking surrogate plumes to monitor, consider seasonal variations in water levels. Jack C. noted that it would take hundreds of years for water to move north to the suspected downward migration area. Clayton Bullington inquired about how plumes to be monitored would be selected. The response was that one plume likely to have natural attenuation occurring would be monitored and that one not likely to have natural attenuation occurring would be monitored to evaluate non-

destructive attenuation mechanisms. It was also noted that more than two plumes might be monitored.

Frank Chapelle then discussed natural attenuation in general and at NSA Memphis. A question and answer session followed. The list of questions for Frank C. prepared before the meeting by the team was posted on the wall and Thuane Fielding wrote down the answers to those questions that were answered during the discussion. These questions and answers are attached. In addition to that information, other important points made during Frank's presentation and the question and answer session were:

- ◇ The USGS provides technical advice to other agencies. He is an advocate of evaluating natural attenuation correctly, not of natural attenuation.
- ◇ You can never drill enough wells to have no uncertainty; complexity increases with the number of wells
- ◇ Strong oxidizing conditions are present (vinyl chloride is degraded quickly, if present); we do have reducing conditions in places.
- ◇ Dispersion is prominent in the fluvial deposits; DNAPL is not likely, DAPL is likely.
- ◇ Where groundwater diverges, dispersion increases.
- ◇ When sorptive capacity is high, blobs form that act as a continuous source. We don't have that, but the plume is not confined.
- ◇ Natural attenuation has good potential at NSA Memphis as part of the remedy. Bioremediation is not the biggest contributor to attenuation.
- ◇ Solvents should not sorb strongly to loess due to low organic content.
- ◇ Models are not recommended for chlorinated ethenes.
- ◇ Natural attenuation is always going on somewhere. To determine if it is working, place wells in path where MCLs should be met.
- ◇ Monitoring well spacing should be based on projected size of plumes (e.g., approximately 100 ft. spacing).
- ◇ Frank not sure that long transect of 100 ft. spaced wells is necessary beyond plumes (unless public or someone wants it). Will need some as part of remedy.
- ◇ Even if biodegradation is low, can still have significant impact on plume.
- ◇ Modeling useful for well placement, time of travel estimates, etc.
- ◇ Hot spot > 10,000 ppb
- ◇ Existing data set tells us alot; no need to monitor another year to decide what to do.
- ◇ Kay W. does not like the BioScreen model.
- ◇ Kay W. likes the proposed the approach for monitoring well placement to evaluate plumes.

In summary, Frank basically concurred with the E/A&H evaluation and approach, although he did not think hydrogen testing or microcosm studies were necessary. See attached list of questions and answers for further details.

30 min

- Discuss proposed southside construction by Army Reserves at SWMU 65
Objective: Develop consensus on remedial action required, if any, prior to construction

The team reviewed the plans for the proposed facility along with RFI data. TDEC wants to review the data further and discuss with UST Division personnel before making a decision. The team visited the site on Thursday.

- 30 min ■ Develop draft agenda for July RAB meeting
Objective: Develop agenda and assignments for deliverables/agenda topics

Time did not allow.

- 30 min ■ Discuss GIS capabilities
Objective: Determine if additional use of GIS capabilities is desirable, and if so define

(Tuesday) The need for Arcview at meetings was apparent during today's meeting. It will be a useful tool when questions come up about sites and data that are not on the agenda. E/A&H has acquired a laptop computer for use at meetings. RFI sample data and maps have been loaded on the computer for viewing through Arcview. Additional time will be needed to customize data manipulation capabilities. This will be done before the next meeting. Rob Williamson will check on the availability of a Navy-owned projection tablet that would allow all meeting participants to simultaneously view what is on screen.

Thursday, 29 May 1997

8:00 am - 12:00 noon Environmental Conference Room, Bldg S-241

- 30 min ■ Review Deliverable Schedule and priorities
Objective: Establish review priorities and assignments for the June BCT meeting.

The team reviewed and revised the deliverable schedule.

- 30 min ■ Update from Randy Wilson on tank work
Objective: Brief the BCT on completed, ongoing, and planned tank work

(Tuesday) Tanks 1490 and 1491 were removed from SWMU 5 area last Thursday and Friday. Excavation area is 50' x 60' x 12'. Floor appears clean, but walls are stained. Pipe trench from fire mat is contaminated. Field IR screening indicates concentrations nearing 500 ppm TPH. E/A&H will check on confirmation sample results (due this week).

Tank 301 at N-94 was removed. Need to encroach on SWMU 15 to remove asbestos-covered pipe.

Morrison-Knudsen is currently removing Tanks 304 and 1239 (large field-constructed tanks near N-126).

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- Discuss VOC sampling requirements for N-12 tank site.

Objective: Come to consensus on number of VOC samples required at the site

(Tuesday) BCT agreed that all samples should be analyzed for VOCs instead of BTEX.

15 min

- Discuss SWMU 2 soil gas sampling results

Objective: Review results and come to consensus on its applicability at the site

(Wednesday) Consensus reached that passive soil gas is not a viable screening technique for this site. Results of USGS survey of elevation of creek bed will be evaluated to determine if soil gas samplers may be installed in creek sediments.

30 min

- Discuss DERA Gray Area sampling plan and schedule for areas around southside hangars S-88 and S-133 (to be demolished)

Objective: Reach consensus on soil sampling/testing required prior to demolition, develop POA/schedule

Buildings S-88 and S-133 were built in 1943 and used for helicopter maintenance training. The plan for these wood-frame hangars is to remove the buildings, the parking lot on the west side, and a slab at S-133. The team visited the sites and determined that removal should proceed and a visual inspection conducted after removal of the parking lot and slab to determine if sampling is necessary.

The demolition of Buildings S-231, S-232, and S-233 was also discussed. Plans are to remove these buildings and convert the space to a parking lot. There is a NATTC hazardous waste accumulation point (HWAP) associated with these buildings. The team visited the site for a visual inspection and determined that based on the appearance, age, and construction of the HWAP, sampling would not be necessary.

There was a question about whether DERA funds could be spent on non-SWMU (e.g., gray area) sites, and whether the Southside Gray Area Investigation was currently funded under CTO-106. (It has since been determined that the answer to both questions is "yes.")

90 min

- Discuss ecological risk assessment/risk management issues with Karen Prochnow (EPA Region IV), Charles Jobe (TDEC), and Brian Mulhearn (EnSafe) - including possible new designation of wetland at SWMU 60

Objective: Provide BCT with an opportunity to address eco-issues with the eco risk assessors. Note: eco-risk assessors will take the remainder of the day to conduct site visits.

Jay Cornelius, Fred Swan, and Brian Mulhearn of E/A&H met with Charles Jobe and Karen Prochnow to discuss general ecological risk assessment issues, then visited most of the SWMUs on both the Northside and Southside with Robert Smith. The two main action items that came out of their meeting were: 1) if a site has no quality habitat, minimize

discussion and do not present a lot of data, tables, assessment procedures, etc., and 2) collect the additional samples at SWMU 8 described above.

30 min

- Summarize decision reached during the BCT meeting/review of assignments

Time did not allow.

Meeting With Frank Chappell

(28 May 1997)

GOAL: To shorten CMS Process Using Existing Data. If Data Gaps Exists, Identify.

Agenda

- Introductions (10:20-10:35)
- General Overview (10:35-10:40)
- Overview of Hydrogeology (10:40-11:10)
- Overview of Contaminant Conceptual Model (11:10-11:30)
- Current Corrective Measures Study Approach

Lunch (12:00 - 12:45)

- Natural Attenuation Discussion (12:45-2:00)
- Closure/Wrap Up (2:00-2:30)

Questions

Is a DNAPL present?

- Is data sufficient to rule out presence of DNAPL? If so, why?

Answer: Sees no evidence of DNAPL. There is nothing at the site that shows DNAPL nor NAPL. (Chasing NAPL is difficult unless you know where it is.)

Is natural attenuation working?

- Are you looking at other components of n.a. besides biodegradation?

Answer: Yes, biodegradation does not appear to be the driver at this site. Dispersion and dilution are the high contributors at this site. The other efficiency measure, "sorption" is not a highly rated measurement at this site. (Note: Not a great amount of [concentration] contaminants to speak of.)

- Will modeling be required to support n.a. at this site? If so, what type?

Answer: (All models are wrong, but some are useful.)

Modeling may help in forecasting the future behavior of the plumes.

Can be useful but not necessary.

None of the models consider the reduction to daughter products.

MT3D may be a good code, Bio Plume 3 (not out yet)

- How does the existing data show that n.a. is protective of the environment and health?

Answer: All 4 measures (biodegradation, dispersion, dilution, sorption) are going on at this site.

Figure out where the plumes are going below MCLs.

- What regulatory stumbling blocks have you run into when recommending n.a.?

Answer: This is not a settled process for the regulatory community as of yet. This type of process is ongoing. The question is what limits do we have and what can we live with. (No established framework yet.)

- What are other feasible options?
- If n.a. is currently working, will it continue to work? If so, why/how long?
- Should alternate remedies or combinations of remedies be used given level of contamination?
- Do hot spots present warrant pump & treat?

Answer: Don't see a hot spot present. If there is a documented hot spot, it wouldn't hurt to do an active removal (in-well stripping or such).

- What is the best way to address benzene plume concurrently with the solvent plume?

Answer: Benzene in a partially anaerobic system is going to degrade.

- What reservations do you have in recommending n.a.

Do any data gaps exist?

- Specifics on outstanding data gaps if n.a. is needed.

Answer: No data gaps seen.

Doesn't need another year of study.

Remediation desired is a different question.

- Is hydrogen testing or any other design parameter (not being collected) necessary for this site? If so, which ones and why?

Answer: Is the system still high H_2 ? Then test for H_2 . Don't need to measure H_2 to determine if methanogenesis is occurring.

In terms of redox, the existing data answers 99% of questions.

- How can degradation rates be calculated with the existing data?
- Would microcosm studies be useful at this site?

Answer: If you want to know rate of degradation, (TCE or PCE) then don't do it. If question is, "Is vinyl chloride produced and oxidized?", then do it.

Point of Compliance Wells

- What is your recommendation on POC Wells?
- Given multiple plumes, which one(s) do we select for monitoring.
- What frequency of sampling is needed to ensure that selected remedy is effective?
- What additional wells, if any, are required for monitoring n.a.?

Answer: Some wells downgradient of plumes to determine what's happening out there.

Natural Attenuation Efficiency

1. Biodegradation (reducing — 2, oxidizing — 4), so overall 2-3
2. Dispersion — 5
3. Dilution — 5
4. Sorption — 2-3

0 = Low
5 = High

Meeting Positives

- if we agree with presentation, we may have eliminated some steps
- clarified we don't have to infinitely define nature and extent
- met objectives to move to shorten process
- found out Frank feels sufficient info exists to support n.a.
- no data gaps
- work has been done well
- focused-team adhered to priorities

- most of the questions got addressed one way or another
- definitely worthwhile
- reinforcement on no presence of DNAPL
- team agreed on n.a. may be preferred remedy — need to figure out a way to reduce procedural steps
- eliminated microcosm study — shortened process
- opportunity to express EPA's expectations
- Clayton and Kay's attendance and involvement
- Frank's help with lessons learned and stumbling blocks shared re: regulation, community.

Meeting Negatives

- time constrained
- everyone was not here for full session
- regulators need to review to ID steps/ways to advance/shorten CMS process
- rushed at the end
- concerned whether Frank had ability to answer a few of the questions

Decisions by Consensus

1. E/A&H prepare CMS Work Plan (include information attached and consider F. Chappelle's Presentation)
2. Does everyone agree that sufficient data exists to evaluate Natural Attenuation as an alternative in the CMS Report? Yes
3. Continue 3 times per year monitoring? If not, what frequency? BCT Resolve

CMS Work Plan incl:

Remedies w/evaluations
 Numeric Simulations
 Proposed Implementation